

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): A method for the production of an InP single crystal, comprising:

gradually cooling a molten raw material held in contact with a seed crystal to solidify the molten raw material from a lower part toward an upper part of an interior of a crucible and grow a single crystal;

causing the seed crystal to possess an average dislocation density of less than $10000/\text{cm}^2$ and assume substantially identical cross-sectional shape and size with a cross-sectional shape and size of a single crystal to be grown; and

allowing the InP single crystal to be grown to retain a non-doped state or a state doped with Fe or Sn.

2. (original): A method according to claim 1, wherein the seed crystal is a seed crystal possessing a largest dislocation density of less than $30000/\text{cm}^2$.

3. (currently amended): A method according to claim 1 ~~or claim 2~~, wherein the seed crystal is a seed crystal manufactured from an InP single crystal produced by the method according to claim 1 ~~or claim 2~~.

4. (original): A method for the production of an InP single crystal, comprising:

gradually cooling a molten raw material held in contact with a seed crystal to solidify the molten raw material from a lower part toward an upper part of an interior of a crucible and consequently grow a single crystal;

causing the seed crystal to possess an average dislocation density of less than $500/\text{cm}^2$ and assume substantially identical cross-sectional shape and size with a cross-sectional shape and size of a single crystal to be grown; and

allowing the InP single crystal to be grown to retain a state doped with S or Zn.

5. (original): A method according to claim 4, wherein the seed crystal is a seed crystal possessing a largest dislocation density of less than $3000/\text{cm}^2$.

6. (currently amended): A method according to claim 4 ~~or claim 5~~, wherein the seed crystal is a seed crystal manufactured from an InP single crystal produced by the method according to claim 4 ~~or claim 5~~.

7. (original): A method for the production of a GaAs single crystal, comprising:

gradually cooling a molten raw material held in contact with a seed crystal to solidify the molten raw material from a lower part toward an upper part of an interior of a crucible and consequently grow a single crystal;

causing the seed crystal to possess an average dislocation density of less than $500/\text{cm}^2$

and assume substantially identical cross-sectional shape and size with a cross-sectional shape and size of a single crystal to be grown; and

allowing the GaAs single crystal to be grown to retain a state doped with Si or Zn.

8. (original): A method according to claim 7, wherein the seed crystal is a seed crystal possessing a largest dislocation density of less than $3000/\text{cm}^2$.

9. (currently amended): A method according to claim 7 ~~or claim 8~~, wherein the seed crystal is a seed crystal manufactured from a GaAs single crystal produced by the method according to claim 7 ~~or claim 8~~.

10. (currently amended): A non-doped, Fe-doped or Sn-doped InP single crystal possessing a dislocation density of less than $5000/\text{cm}^2$, which is manufactured by the method according to claim 1 ~~claims 1 or claim 2~~.

11. (original): A non-doped, Fe-doped or Sn-doped InP single crystal possessing a dislocation density of less than $5000/\text{cm}^2$, which is manufactured by the method according to claim 3.

12. (currently amended): An S-doped or Zn-doped InP single crystal possessing a dislocation density of less than $500/\text{cm}^2$, which is manufactured by the method according to

claim 4 ~~or claim 5~~.

13. (original): An S-doped or Zn-doped InP single crystal possessing a dislocation density of less than $500/\text{cm}^2$, which is manufactured by the method according to claim 6.

14. (currently amended): An Si-doped or Zn-doped GaAs single crystal possessing a dislocation density of less than $500/\text{cm}^2$, which is manufactured by the method according to claim 7 ~~or claim 8~~.

15. (original): An Si-doped or Zn-doped GaAs single crystal possessing a dislocation density of less than $500/\text{cm}^2$, which is manufactured by the method according to claim 9.